Fourteenth Year of Publication

Industrial FINISHING

Reg. U. S. Pat. Office

Devoted to Product Finishing in the Factory

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Letters from Readers

OF INDUSTRIAL FINISHING

These letters (and many others) were answered recently by the editorial department, but are published here to reveal certain interesting trends of desire and activity in the industry, and to encourage additional inquiries, comments and suggestions. Further information about any of them can be obtained by writing this office.—Editor.

Cedar Leaf Oil

Will you please tell me the full name and address of the Sparhawk Co., who make cedar-leaf oil mentioned in the article on page 52 of your June number?—A. K. R.

Treating Weld Lines

I note with interest your article (in April issue) on the use of lacquer and synthetic enamel on the paint line of the Studebaker plant and, in particular, I note that Operation 10 mentions a sealer coat over weld lines and soldered spots.

As I have been having trouble for some time with large bubbles forming in the paint on the welded lines, I shall be very pleased if you will give me any information as to the makers and the type of paint mentioned in your article, and whether it will stop or retard the formation of these little bubbles.—K. W. O. (Work Mgr., English Auto Mfg.).

This is a clear resin solution, made by an American manufacturer. It is baked 20 minutes at 180° to 200° F., and if properly used will eliminate the trouble you complain about. —EDITOR.

"Metalprep"

We were interested in reading, in June 1938 issue of INDUSTRIAL FINISHING, under Questions and Answers, page 50, something regarding a cleaning compound known as "Metalprep." We notice that the Neilson Chemical Co. produces this cleaner, and we are writing you to ask your assistance in obtaining for us further information regarding this "Metalprep." Possibly you could contact the Neilson Chemical Co., informing them that we would appreciate samples of small quantities of their cleaners. We are unable to write directly to this company as their address was not available in your publication.—U. Mfg. Co.

The Neilson Chemical Co. is located in Detroit, Mich.—6564 Benson St., see July issue, page 8.—EDITOR.

Hammered Spray Finish

In the June 1938 issue of INDUSTRIAL FINISHING, we notice an article describing a "Hammered Finish" that can be produced by a spray gun. We would like further information concerning the manufacturer of this material.—O. E. Mfg. Co. (Metal Furniture).

This is a product of Hilo Varnish Corp., 44 Stewart Ave., Brooklyn, N. Y.—EDITOR.

Mica . . Aluminum Paint

I have read with much interest the article appearing on page 63 of your July issue, "Omit Mica From Aluminum Paints." Could you send me the page from your May issue containing the article "Mica Powder in Paint," while I will be on the look-

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out for the further article on the same subject, which you say will appear in a future issue of INDUSTRIAL FINISHING?—R. L. Paint Co.

Perspiration-Proof Lacquer

We are interested in the item "Perspiration-proof Lacquers" mentioned on page 39 of the January issue of INDUSTRIAL FINISHING. Would you kindly furnish us with the name of the supplier in order that we may contact them for information direct?—A. A. Co. (Safety Appliances).

Glaze Finish on Roof Tile

Would you kindly send me any particulars concerning a glaze finish on concrete roofing tile? We spray Portland Colorcrete on the tile when they are wet. Is there any dry or liquid material which we could add to produce a glaze finish?

I wish to congratulate your firm on the excellent way in which you describe the different processes step for step. I receive your book each month.—F. H. C., Wellington, New Zealand.

Your inquiry, which has just reached us through INDUSTRIAL FINISHING magazine, is appreciated. The two booklets, mailed you today, will help you to visualize the exceptional merits and potential possibilities of the Colorcrete Stucco Spraying and Resurfacing Industry right in your own country.

Please study the literature carefully; also the form letter enclosed, which is usually mailed in response to inquiries from our international advertising. It will serve to give you a better understanding of our entire proposition. — Colorcrete Industries, Inc., U. S. A.

Articles Worth While

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material was taken from your publication. We would appreciate your cooperation very much in this matter, and would be glad to reciprocate in like manner.—J. J. B. & Staff. (World-Wide Research).

It's okay when credit is given.—EDITOR.

White Celluloid

Please advise us of a manufacturer of white celluloid for manufacturing piano keys.—T. C. H.

Silk Screen Tools

Referring to your February 1937 issue, concerning the article on "New and Useful Tools for the Stencil Screen Cutter," by H. L. Hiett, kindly furnish us with prices, where we can obtain these articles and also any other information which will be of assistance to us.—N. U. E. Co.

Deplated Finish

We have some aluminum castings and extruded moldings which are to be deplated and highlighted and used in radiator grilles inside of school buildings. There is nobody in Buffalo that knows how to do deplating.

Can you tell us how this deplated finish is produced? Is it an electroplating process which requires the regular electroplating equipment? Can the same results of color and finish be produced in a chemical way without the use of electricity? Can deplating be done on any aluminum alloy? Can it be done on either cast or extruded metal?

This has been referred to a division of the Aluminum Co. of America that specializes in the Alumilite process of finishing aluminum surfaces.—EDITOR.

Will Polish Sheet Aluminum

In your June 1938 issue, on page 6, is an inquiry from the E. Mfg. Co. concerning highly-polished aluminum in rolls. We would like very much to correspond with this company and believe we can quote them attractive prices on polishing their aluminum. We have complete equipment for polishing and plating in

(Continued on page 54)

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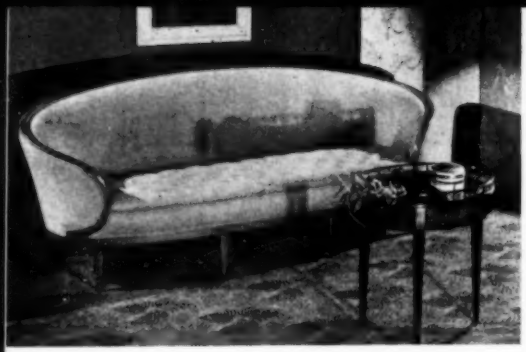


Pleasing balance and good proportion, with interesting tapered leg treatment and smooth flowing lines characterize this Swedish Modern davenport. Notice the cocktail table, with sunken ivy receptacle.

Designs and Finishes at

BY ROSALIE FLANK
American Furniture Mart

★

ANALYZING the new Swedish Modern, which practically dominated the style news of the market: In general appearance it was simple and graceful, with tapered legs, sweeping curves, light in proportion and with open arms on the chairs, legs on the cabinets, etc. Some manufacturers attempted to rename the old-style modern "Swedish Modern," but realized this was not possible when the show got under way, for the new Swedish Modern more nearly resembled the 18th Century styles than the contemporary styling of the past seasons, heretofore known as "Modern."

Upholstered living room pieces, dining room, bedroom, occasional furniture and lamps were shown in the new Swedish Modern treatment, each with certain characteristics established as standard on the first models. It was particularly noticed, however, that while for many manufacturers it was the first attempt at Swedish Modern, the general designs were extremely good — conservative, carefully worked out, and to all visible extent, a permanent contribution to home furnishings designs.

Woods, Finishes and Trim For Swedish Modern

Light finishes ranging from a gold fruitwood tone to a tobacco brown were universal on the new Swedish Modern, many manufacturers adopted the names "Harvest" and "Wheat" to designate the color. Bleached maple was used for dining room chairs and for the solid parts of many case pieces and a number of frames on the upholstered pieces.

Mahogany, walnut, prima vera and fruitwood were used to a large extent in fashioning the new pieces. Many manufacturers seemed to be casting about for names which would describe the new finishes. . . . One manufac-

A candid camera shot of the new "Futique" introduced at the Home Furnishings Show (in July) at the Furniture Mart. This mahogany suite has marquetry inlays and is of 18th Century origin.

Chicago Furniture Show

turer showed new occasional groupings in Swedish Modern in No. 1, 2 and 3 finishes, ranging from very light to medium and deep golden tones.

Cane was a popular trim on the new Swedish pieces; it used in novel ways, as for example: Caning on chair backs; panels in curio cabinets, sideboards and beds; wound around drawer pulls, and on mirrors. Leather inlays, in a beige tone as well as in antiqued brown, were used as insets on occasional tables, dressers, and desks. Small gold border trims around the edges of the leather, separated it from the wood.

Blue enamel trims were used on some pieces in an attempt to carry out the blue and yellow of the Swedish color. Blue was applied to mirror frames on dressers, on the hardware, and on a chair or stool accompanying certain bedroom suites.

Dining room suites and breakfront cabinets used blue interiors to carry out the popular Swedish colors.

Most of the pieces shown were plain, with tiny beaded or rope border moldings. Some attempt was made at relief carving on a few pieces, but for the most part they were without ornamentation.

Hardware was confined to simple brass or wood pulls, usually very small—either solid disks or neatly designed ovals or squares. When wood pulls were used, either long wood bars or simple knobs were shown. Crystal spheres were used for attractive pulls on some suites.

Upholstery Fabrics

Upholstery fabrics ran to cool Swedish colors in greyed tones of ice blue, sea green, coral pinks, and dark tones of cocoa, grey and taupe. Fabrics were of simple design with plain colors interwoven in small neat designs. Texture fabrics were stressed, and the simple frames gave added beauty to the well designed upholstery.

Swedish Peasant Furniture

In contrast to the sophisticated type of Swedish Modern, was the peasant type shown by some man-

ufacturers. Dinette and breakfast sets in brown maple, with painted chair backs and decorated cupboards, were displayed. Viking groups with slab ends, grooved into rugged squares, were other variations of the more sturdy type of Swedish designs shown in dining room and occasional pieces. Outside hinges, Welsh-type cupboards and general peasant-type furniture in oak and maple, with light colored Swedish-type ornaments painted on the pieces for trimming, gave a festive note to the simple, peasant-like groupings.

Eighteenth Century Styles

Eighteenth Century pieces, influenced by the Swedish Modern trend, ran to simpler lines, with Hepplewhite, Adam and Sheraton styles featured. In an about face, however, from other markets, 18th Century pieces were shown in dark finishes, leaving the glories of the lighter tones to Swedish Modern. A number of the 18th Century suites had rich but conservative marquetry inlays, showing a trend back to simple, yet decorative period pieces.

French pieces appeared to be on the wane in popularity, or perhaps they were dropped back into the second row with the arrival of the new Swedish celebrity to the front row of the style chorus.

A candid camera picture of some of the new Swedish Modern occasional furniture, snapped during the recent summer market. The grouping is made of mahogany and was designed by Ernest Swarts. The cane trim on the interesting curio (trophy) cabinet is noteworthy of the trend. The cocktail table has a leather inset.

Kitchen Furniture

Kitchen furniture took on new interest with the use of grey as a secondary color. The frame work of kitchen cabinets, tables and chairs were of slate grey on some of the new ensembles shown, and had white doors, table tops and seats as an interesting contrast.

Duo-tone oak was also featured in beige and brown tones, pearl white and light French blue. These suites had colored porcelain table tops and work shelves on the cabinets, matching or contrasting with the color theme of the ensembles; ivory, ruby red, cobalt blue and other colors were shown. Linoleum tops were also featured. Particular attention was called by one manufacturer to the finish on their duo-tone oak which boasted five complete operations. The result was a beautiful rich finish in clear colors distinctly showing the grain of the wood, the color being applied evenly throughout the ensemble.

Black and white was featured on a number of kitchen ensembles. The pieces were finished in white enamel, then striped with

black, and black linoleum table tops and work shelves were added. Old ivory was a new color introduced on kitchen furniture.

Lamps; Radio Cabinets

Lamps followed period designs, wood lamps being more popular than ever before. New examples of Swedish Modern lamps were shown in light finished wood, with interesting, unusual fabric shades. Colonial maple and mahogany lamps were also shown with the same details and finishes on the wood as on occasional furniture.

Radio cabinets in period designs, with complete radios built into drum tables, chests of drawers, consoles, and end tables offered an interesting development. These were shown in period as well as in modern pieces, and in walnut, mahogany, maple and satinwood.

Other Highlights in Exhibited Furniture

Other innovations at the market, noteworthy of mention as possible forerunners of new trends, included:

1) An Adam period bedroom suite in satinwood in a new "heather" finish, with Okoume crotch panels and marquetry inlay. White filler rubbed into the wood brought out the true beauty of the grain.

2) A new English Modern suite in stylized design, made of mahogany in a tweed finish (bleached then rubbed with red filler).

3) A new style trade-named "Futique," combining future and antique styling, namely 18th Century and French pieces in modernized design.

4) A hand-carved mahogany hunting chest with gun barrel legs and hunting scenes carved into the panels.

5) Tiny juvenile cradles and rockers equipped with Swiss music boxes which played "Rock A'Bye Baby" and "The Parade of the Wooden Soldiers" when the toys were in use.

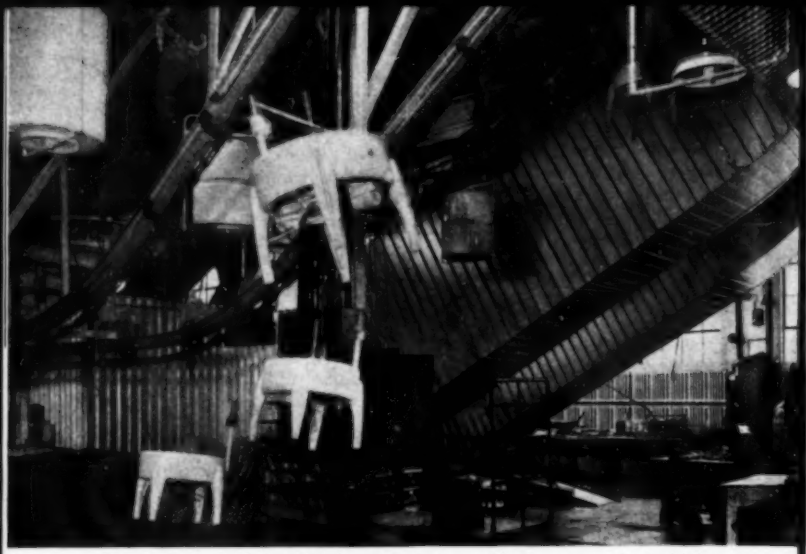
6) Ashtrays built into the arms of upholstered pieces, which were removable for cleaning.

7) "Snow White and the Seven Dwarfs" was the principal theme on juvenile merchandise, the characters being applied to birch, maple and enameled suites, either in cutout form or by decalcomania.

8) New colonial furniture following covered-wagon designs, the head and foot board resembling a wagon wheel with brass hubs.

9) New space heaters, finished to resemble wood radio cabinets and equipped with dials to adjust heat, attracted attention.

Swedish Modern presents a dignified appearance in this china and side chair.



Oven in factory of Easy Washing Mach. Corp. Photo courtesy R. C. Mahon Co.

How to Use Bake Finishes

BY RAY C. MARTIN

What bake finishes are made of, how to order, what to include in your specifications, how to make tests, where to store material, why and when to stir it, how to add thinner; what type of racks, trucks and conveyors to use; oven heats and baking time; sensitive colors and two-coat baking jobs.

TO CLARIFY the expression "baking," as applied to finishes, I refer to a process of drying a coating material in an oven by the application of artificial heat—the heat ranging from 200° to 350°F. Artificial heat is employed on certain types of coatings to produce a hard thoroughly-dried film. Sometimes a mild heat is used in production to hasten evaporation by driving volatile solvents from the film. However, this is not baking in the sense referred to above.

What's in Bake Finishes

Coating materials of the baking type are composed of a clear liquid or varnish vehicle, pigment matter, volatile liquids (thinners) and they may or may not contain driers. The varnish vehicle may be an oil-resin or a synthetic type. It is the function of this vehicle

to impart body or fullness to the finishing material, and to act as a carrying agent for the coloring matter or pigment.

Pigment, as its name implies, adds color which may be used as a distinctive identification for certain products. The hiding power of color also serves to cover certain deficiencies in a metal surface, such as discoloration and leafiness in the metal and thereby permits the use of a cheaper metal.

Volatile liquids are used to spread or extend the varnish-pigment mixture to a point where atomization by spray gun can be accomplished or, in the event of dip application, to assist in the flow of the colored coating.

Driers are sometimes used in bake-finishing materials to assist in drying—but as a rule, baking finishes do not require driers because the oxidation is accentuated by the high baking heat. However, if the heat used is low, or in the higher brackets of a force-dry finish (170° to 180°F.) small quantities of drier are sometimes employed. Several types of driers are available—oil driers, japan driers, liquid driers, etc. The action of driers in oils is not thoroughly understood, but they probably act as catalytic agents carrying oxygen from the air to the oils. Most driers are salts of certain metals. The metallic salts commonly used are lead, manganese and cobalt.

What to Ask for, and What to Test for

To secure a suitable finish for any particular job, the following information is required: Color, type of application, baking temperature, baking time, type of oven, sheen required or expected, number of coatings, reduction, and the life expectancy (durability) of the finish. Some of this information can be left to the discretion of the supplier, but in general this information should come from the user.

Upon receipt of a shipment of enamel a sample should be taken from each drum—or a composite representative sample from several drums—and compared with a standard sample which represents the merchandise desired. The sample should be tested for: Viscosity or body, color, and the Baume reading. If satisfactory, it should be stored in a suitable place until ready for use. This storage place should be away from factory operations. A storage shed with sufficient heat to prevent freezing is satisfactory. In the case of materials having heavy pigments that may settle during storage, it is necessary to employ some means of stirring up or agitating the material to get the settled pigment back into suspension again before it is ready for use. Some concerns use a type of apparatus that rotates the drum by power.

Agitate Material and make it Room Temperature

If the pigmentation is heavy and the liquid is of light to medium viscosity, a 3-ft. length of chain can be placed in the drum to assist in the mixing operation. In any event, the material should be thoroughly agitated before it is used—and its temperature should be brought to approximately room temperature.

Most pigmented materials are now shipped in agitator drums. In this event the drum-rotating

device just mentioned need not be used. The agitator is generally sufficient to thoroughly stir and mix the contents of the drum. Hand or power agitators may be used. If the entire contents of the drum are emptied into a larger container for mixing (thinning) purposes, a small quantity may remain in the drum. When this happens, thinner may be added and stirred in to make this remaining material thin enough to be easily drained from the drum to the tank.

How to Add Thinner; Use Clean Containers

When adding thinner to a tank to mix for spraying, care should be exercised to avoid producing static electricity which might cause an explosion. Always pour the thinner in a steady stream against the side of the tank or against a baffle plate. After thinner is added, the contents should be accurately measured to produce the exact degree of viscosity desired. All material should be strained before it is used.

If the material is to be sprayed it may be drawn from the tank and placed in the spraying container. It can be piped into the spraying line or may be sprayed directly from the container. In any event, the gun, spray line and container should be perfectly clean. If some means of application other than spraying is to be employed—for example, dipping, tumbling or whirling—clean containers and cleanliness of application still hold good. In any method of finishing, certain specifications regarding viscosity or body should be rigidly adhered to.

Racks, Trucks, Conveyors

When small parts or articles are sprayed they should be racked in such a manner that complete coverage can be obtained. Where baking is involved the racks must necessarily be of metal. Racks may be placed on a truck or conveyor to be moved into or through the oven for baking purposes. Immediaely after a bake-finishing material is applied it should be allowed a short interval of air-drying time for the wet coating to level out and for any air bubbles to rise to the surface and break before being subjected to the intense oven heat. Usually this occurs naturally in the course of handling the parts being finished. In other words, a short period of time generally elapses before the freshly coated parts reach the oven interior, either by hand-lifted trays or by trucks or by conveyor.

Oven Heats and Baking Time

The oven, whether heated by electricity, gas or oil, and whether directly or indirectly fired, should be clean and adequately ventilated. This is very important to proper baking results. Uniformly distributed heat, accurately controlled, is necessary if exacting results are to be attained. Naturally, when oven doors are opened to admit and release oven charges, there is a loss of heat. To counteract this, the baking time may be slightly increased. Some permissible variations in time and temperature from say a specified 250°F. for one hour are: 275°F. for 45 minutes or 225°F. for 1¼ hours.

After the work leaves the oven, provision should be made for allowing it to cool before it is ready for any kind of handling.

Certain colors are very sensi-

tive to excessive heat, therefore, the safe maximum temperature at which they can be baked without discoloration should never be exceeded. In fact, sometimes it may be necessary to bake certain colors for a longer period at a lower temperature. Such recommendations should be secured from the supplier of the baking enamel.

Handling Sensitive Colors and Two-Coat Baking Jobs

In two-coat bake finishes of the same material it is generally advisable to bake the first application at a lower temperature than the second coat. The second coat then receives a top temperature bake which thoroughly fuses both coats into one heavy coating. For example, if the first coat is baked at 225°F., the second may need to be baked at 275°F. Certain synthetic enamels will not hold to this schedule without a lifting action taking place when the second coat is applied. Before deciding upon the baking temperatures for a 2-coat synthetic enamel you should find out the temperature at which the synthetic resin fuses, and determine whether it will "accept" a second coating. You can get this information from the manufacturer. In the event that you have to use a prime coat or ground coat, this will receive its regular bake, and then the enamel, in turn, will take its regular bake.

Bleached Walnut

THERE seems to be considerable demand for bleached walnut finishes; consequently I believe a few suggestions on bleaching would be in order.

There are various bleaches used —with likewise varied results. Some good ones are on the market; others are "homemade" according to various formulas.

Under no condition should a bleaching solution be applied over finger prints or grease, as these foreign substances naturally act as a resistant. Have the wood clean.

No matter what bleaching solution is used, it is always well to sponge off the work with clean water to remove all bleach after the desired shade is reached. Otherwise the bleaching solution may disintegrate the finish that is applied later. Although hot water is necessary in dissolving and mixing some bleaching solutions, the bleach should be allowed to cool before it is used, unless the directions call for a hot bleach.

After the walnut has been bleached, water-sponged and allowed to dry, I usually apply an even coat of wood lacquer that has been reduced with four parts of thinner to one part of wood lacquer. This seals the pores of the wood so that when the light wood filler is applied, the oil in the filler will not penetrate so deeply and thus darken the finish.—H. H. GLINKE.

Silk Screen Process Book of Supplies, Prices, etc.

A new and attractive loose-leaf booklet and catalog of silk screen methods, supplies, paints and equipment has been prepared for users of silk screen stencils by the Naz-Dar Co., 4014 N. Rockwell St., Chicago, Ill. Pages are 5½x8-in.; the heavy black paper cover is attractively decorated in red by the silk screen process. Illustrations, prices, cost forms, a color card and other uptodate information about the newest tools and methods are included in this valuable handbook which should be in the desk of every user of silk screen stencils.

ADDITIONS OF MICA ARE HARMFUL TO *Aluminum Paints*

BY G. H. FITCH
Aluminum Co. of America

BECAUSE OF ITS durability aluminum paint is widely used for the protection of practically all surfaces. This durability is dependent in a large measure upon the opacity of the aluminum pigment. The pigment is made up of minute flakes of pure aluminum that have the unusual characteristic of arranging themselves into more or less parallel layers when suspended in a suitable vehicle, an arrangement very similar to layers of fallen leaves, and therefore appropriately termed "leafing."

The leafing of the pigment tends to form a practically continuous metallic layer at the surface of the paint film and since the flakes themselves are opaque to light, this gives a coating of high opacity when the paint is applied. As is well known, all drying oils are adversely affected by sunlight and, because of its

The illustration at the left shows three divisions of a steel panel, each one finished with two coats of paint and exposed to the weather for 5½ years. Top section was painted with pure aluminum paint; middle section, aluminum paint containing 50% of mica; bottom section, aluminum paint containing 75% mica. Extent of rusting is shown by dark areas.

opacity, aluminum paint is especially effective in resisting this cause for deterioration. Consequently the life of the coating is extended considerably.

Occasionally questions arise as to the advisability of using an extender in aluminum paint for some or all of its applications. Mica is one of the materials most frequently suggested for use in aluminum paint. In practically all cases, the addition of a material of this type consists of an adulteration and may seriously injure the usefulness of the paint. Numerous tests on mica-containing aluminum paints have shown that there is a definite decrease in the durability of the paint when mica is present in any appreciable quantity.

Mica Mixture Coating Lacks Durability

Since opacity of an aluminum paint film is one measure of its durability, it is logical to conclude that the addition of a transparent material, such as mica, to the aluminum pigments should lower the durability of the paints made with them. Experience proves this to be the case.

The accompanying photograph shows a comparison between pure aluminum-pigmented paint and two other coatings of mica-containing aluminum paints after five and one-half years' exposure to normal weather conditions. The paints were all made with the same vehicle and applied to the same steel exposure panel in 2-coat applications. The top third of the panel was coated with an unadulterated aluminum paint; the middle section was painted with an aluminum paint containing 50% mica, and the bottom third was coated with paint containing 75% mica.

It can be seen from the condition of the three sections that the lower portion of the panel, containing paint with the greatest percentage of mica, shows the most deterioration. Excessive rust streaking and pitting of the panel has taken place in this area. Considerable rust streaking is also apparent in the middle section which had been coated with the 50% mica paint, while the pure aluminum-pigmented paint at the top shows little or no failure. Rusting first occurred on the bottom of the panel after two years exposure, and failure on the middle area became evident after about four years.

Similar exposure tests in which the mica content was varied from 0 to 100% further emphasized these results. A steel panel coated with two coats of a paint made with mica alone showed failure after two or three months, and by the end of nine months it was so badly rusted that it was removed from the test. At the end of 18 months, all mica-containing paints had begun to show some failure, whereas the pure aluminum paint was still in very good condition. A six months' exposure test with wood panels showed bad to moderate checking and cracking of the paints containing mica, while the straight aluminum paint remained in good condition.

Practically every state and government specification requires that no mica be present in aluminum pigment, and government orders have been issued to the effect that aluminum powder containing mica must be branded as "Aluminum Compound." In addi-

tion to such branding, the presence of mica in aluminum paint may also be determined by simple chemical analysis.

How to Detect Mica in Aluminum Paint

Ordinarily it is quite difficult to detect, visually, the presence of mica in aluminum powder because of the color and flake-like structure of the mica flakes. Substantial amounts of mica can be added to the pigment without changing the general appearance of the aluminum. However, mica can be detected by treating a small portion of the aluminum powder with a dilute solution of hydrocloric acid (1 to 5) and gently heating the mixture until the evolution of gas ceases. The aluminum particles dissolve, while any mica present will be practically insoluble and can be filtered off as a residue and examined. The mica is identified by its characteristic structure, and is especially apparent under the ordinary laboratory microscope.

Since mica and, for that matter, practically all other types of inerts have such a marked effect on the durability of aluminum paint, it is obvious that their use should be avoided where long life of the paint film is desired.

Glass Marking Inks

Inks for marking on glass, porcelain and metal have been developed by the Westinghouse Electric & Mfg. Co.

Glass marking inks in both black and white, which adhere to a surface when applied with a steel pen are available. The composition of these inks is such that it will not interfere with the vacuum conditions in a vacuum chamber where it may be used. If set by the application of a moderate temperature they cannot be removed completely by ordinary scraping. Both of these inks can be used on glass beakers, porcelain surfaces and thermometers, as well as for decorative effects.

A silver monogram ink, used primarily for the "W" monogram on Mazda lamps, has also been developed. This ink may be applied with a rubber stamp, but in order to fuse the metallic silver deposit into the glass, it must be dried by the application of heat.

A black monogram ink, drying in two minutes, and which can be applied with a rubber stamp is also on the market.

Al B. Sinclair Dies

Mr. Al B. Sinclair, associated with The Stille-Young Corp. for 12 years as southeastern representative in the industrial field, passed away Saturday, July 30th, in Atlanta, Ga., where he made his home.

Mr. Sinclair's long practical experience, as well as a natural aptitude for sales, made him invaluable to his employers; and his suggestions as to finishing processes were valued by buyers and finishing superintendents as being of the greatest help.

C. F. Brigham of Lilly Varnish Co. Dies at Age of 71

Chas. F. Brigham, chairman of the board of the Lilly Varnish Co., Indianapolis, Ind., died suddenly at his home in Indianapolis on Thursday, August 4.

Mr. Brigham became chairman of the firm's board of directors three years ago after having served 10 years as president of the company. He came to Indianapolis in 1921 and, with the late Charles M. Malott and W. I. Longworth, bought the company.

Survivors include the widow; a son, Walter C. Brigham, and a married daughter.

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With this wide assortment of materials to choose from, you may select the correct finish from the standpoint of application, sales appeal and durability.

Mention your requirements and we will submit recommendations. The more information you give us the better we can serve you.

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• CHICAGO •

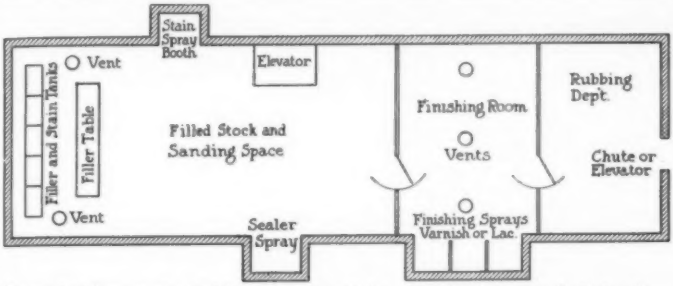
FURNITURE FINISHING METHODS, SCHEDULES AND

Production Layouts

Much can be accomplished in the way of reducing costs and time in the finishing department by having suitable equipment and work stations arranged conveniently to permit continuous straight-line production. Lay out your floor plan and chart the course of work in process from the time it enters and until it leaves the department. Allow plenty of space for the furniture in process to occupy as it undergoes each active operation and each period of drying. Don't forget the vast amount of useful space overhead. You may need some double-deck storage space, multiple-deck trucks, conveyors on different levels, force drying, automatic coating machines, etc., to supplement the floor space you have available — according to the volume of work that is to be put through in a given length of time. And keep in mind skilled workmanship and quality materials on everything—with minimum number of rejects or damaged pieces.

BY F. R. BOYNTON

IN THE average finishing room, as well as in other production departments of a furniture factory, considerable waste occurs in handling and transferring work in process from one station to another. There are ways whereby this waste can be cut to a minimum. If the layout of equipment and work stations is suited to the type and volume of finishing being done, the foreman finisher can accomplish something tangible in keeping his production costs down — or in preventing them from going too high. This is important, as in these days of close competition a slight difference in costs may mean the difference between landing and losing a contract. Today, margins of profit are comparatively small in furniture manufacturing, therefore in the factory the merchandise must be handled as quickly and economically as possible.



Suggested layout of a finishing department for a small plant manufacturing low-priced or medium-priced furniture. Furniture in the white enters by way of the elevator and moves by easy stages through the following operations: Spray stain (usually shading), filling and staining by dip tanks, filler wiping and rubbing, spray sealer, sand sealer, spray finishing coats, rubbing and polishing. Periods of drying follow practically every operation, of course. Finished goods leave by elevator or chute at right. Suitable ventilators are placed 6-in. above the floor.

As an example, suppose we consider the finishing department in a small or medium size furniture plant that is reasonably well laid out for straight-line production. The floor plan shown here might be taken as a typical example. We will start with the staining and filling stations which are close to the elevator or door through which furniture in the white enters the finishing department. Here we have the staining booth located as close as possible to the filler tanks in order to save moving time. The dip tanks containing filler (chairs and small pieces of furniture are dipped) are placed conveniently, and the drain boards are long enough to accelerate the time of removal, with minimum handling.

For case goods the filler is generally brushed on, although in some factories it is flowed on or sprayed with a portable unit consisting of a centrifugal pump that forces material at low pressure through a hose and nozzle which is handled by the workman. Stains also can be applied with this kind of unit. The piece of furniture being stained or filled is placed on a turntable above a drain tank which catches the overflow and drains it back to the pump.

The sealer coat spray booth is located close to the area where furniture is placed to dry after the filler has been wiped off. I always prefer to spray the sealer coat from a force-feed system or pressure tank, as this method of application will produce a more even coating, with the result that there is a saving in time of refills and less wastage of material, hence more and better production. It is the small things that count and often they are the most expensive, as most of us can see only the larger sources of waste and expense.

The average finisher's sanding facilities and methods are not

without some faults. A lot of extra labor and sometimes the complete removal of a finish may be caused by sweaty or greasy hands contacting the wood while sanding, or handling the furniture with bare hands at some point along the line of production. Special precautions should be taken regarding this, especially if a lacquer finish is to be applied.

Ventilation; Spray Pressure

Every finishing room needs adequate ventilation. All foul odors should be removed promptly and effectively in order to keep the workmen feeling fresh and efficient. If you have ever visited a poorly ventilated finishing room you can readily understand why the workmen can not be 100% efficient. They acquire a "draggy feeling," their wits are dulled and in consequence their work slows up and they make mistakes that are costly to the company.

For spraying lacquer I have found that a pressure of about 65-lbs. is ideal. Anything in excess of this leads to material waste and therefore produces a higher cost per unit. A lower pressure is likely to cause "orange peel" effects which, in turn, calls for more rubbing to get the desirable smooth finish.

Notice the lacquer or varnish spray room in the accompanying drawing. It is partitioned off from the area occupied by sealer sanding operations and from the rubbing room.

Rubbing Dept.; Cooperation; Conveyor Systems

In an efficient rubbing department, machines are used where possible. On this work, the proper grade of wet or dry sandpaper can be used to good advantage, as it reduces rubbing time and is cheaper (by test) than pumice stone.

The rubbing department, as you will notice on the accompanying layout, is placed convenient to the shipping room in order to maintain a minimum of handling the finished goods. Units of work in process should move in a straight line toward this goal.

In efficient production, it is not just the efforts of one department, but rather it is the cooperation each one gives to another that makes for a smooth-running balanced factory organization.

A modern conveyor system can be used effectively in many finishing departments. It is a real source of cost reduction because it saves the manual labor of moving the units in process so often. It goes a long way toward preventing mars, dents and scratches that occur in the ordinary way of handling. Also, it is a space saver; often the conveyor enables smaller plants to increase their production without enlarging their floor space.

Spray Painting Instruction; Autumn Classes

The DeVilbiss Co., Toledo, Ohio, announces the schedule of their training school for the last half of 1938. The training period lasts for one week. Classes will start on the following dates: August 1 and 29, October 3 and 31 and November 28. Special rates in Toledo hotels and boarding houses near the plant have been secured by the company for men attending the school.

This school is open to industrial painters, master painters, automobile refinishers, and all others interested in learning the technique of spray-painting, and the use and care of spray-painting equipment.

These classes have been well attended in the past because of the facilities for study offered by the DeVilbiss Laboratories.

General and close-up (insert) views of finishing room equipped with new twin-bench airfinishing booths. Photographs, courtesy of the Paasche Airbrush Co.

Decorating Book Covers

BY CARLETON CLEVELAND

ALWAYS EAGER to improve the quality of the products it manufactures and therefore ever on the lookout for more modern methods and equipment adaptable to finishing embossed book covers and leatherette products, The S. K. Smith Co., recently made some interesting changes in the finishing department at its Chicago plant.

Two sample book covers with embossed decorative designs finished in colors.

Two new airfinishing units, each with multiple booths and a single fire-proof exhaust were installed. Each unit consists of five special 3-ft. twin bench fireproof airfinishing booths, 48-in. high, with a 30-in. work-shelf. The

movement of air across the entire face of each booth is 165 lineal feet per minute. This new installation replaces homemade box-type booths, which failed to provide adequate ventilation and were also a constant fire hazard.

In the method now used the vapors and over-spray of finishing materials fall through an expanded metal work-shelf to a ventilating duct beneath the bench, and are carried by suction to the exhaust outlet. In the former method, particles of pigment would find lodgment in the hoods above the spray booths only to fall back into the booth space and onto the operators and the work in hand. Not only did this cause undue annoyance to operators, but frequently it resulted in damage to the work and a lowering of the standard of quality. It is now possible to obtain clearer colors, since all excess pigment is immediately drawn through the grid work-shelf and into the outlet duct. Result: Better work, happier and healthier operators, and a reduction of the fire hazard.

Material for book covers is received at the plant in rolls already coated with pyroxylin coating and is combined with fiber or box board. It is first grained with a pattern and embossed with the design detail. After being embossed, the units, loaded on skids, go to the spray booths to be sprayed through stencils with hand-operated sprayers — lacquer with a pigment base being used. Then they are sent to the finishing benches where the overtone coloring is applied and the final polish is given.

Any finishing material you buy or any finished product you make can be tested quickly and effectively to demonstrate its resistance to sunlight, weathering or repeated washing. You can do this in your own laboratory or have it done in a commercial testing laboratory. A machine is available which can be set to duplicate months of summer sunlight or other types of weathering in a few hours or days. With the information revealed by these tests you can set and maintain accurate standards for the durability of your products and you will know what materials and methods are needed to produce the results you want. The testing machine takes guesswork out of forecasting probable performance.

Flexible Lacquer Is Still a Good Finish

The Roxalin Flexible Lacquer Co., Elizabeth, N. J., calls attention to the fact that there are few industries which have developed as rapidly as lacquers and synthetics. Remarkable improvements in production finishing materials are brought out each year, and what was acclaimed as a great advance a few years ago may be called obsolete today.

In its engineering of finishes for specific performance, the Roxalin Co. has explored numerous possibilities in new raw materials and has developed custom-made products that give unusual performance. However, in spite of all this progress, it is a high tribute to Roxalin's original flexible lacquer enamel that it continues to rank high among industrial users as an attractive durable air-drying finish.

Although unchanged for more than 10 years, these enamels have the characteristics and merits that are in demand today by many large manufacturers. For example, 1) they do not require a primer on brass, aluminum, nickel or die castings; 2) they are resistant to oil and gasoline; 3) instead of gradually becoming more and more brittle, they actually improve with age; 4) they will not crack or chip under severe abuse. Metal finished with this material 10 years ago has even been punched and formed into bottle caps without injury to the film.

WHAT A GREAT IMPROVEMENT OCCURRED IN SPRAYING WHEN THESE

Sprayers Got Clean Air

What I found out when new spray guns in a large plant rapidly got out of order, rejects increased and spray pressure seemed inadequate while gauges showed 110-lbs.

BY H. H. GLINKE

IT WOULD be difficult to determine just how much efficiency is lost in the manufacturing field because of dirty air; but if figures could be compiled they would most certainly be astounding. A typical example follows:

A large manufacturing concern was having no end of trouble in their finishing department. It seemed that piece work rates had been set up on a new line of products. New spray guns were issued to each workman when the time study was made. For a while everything seemed to be working satisfactorily. The men were satisfied with their rates and some of them did surprisingly well.

Suddenly, for no apparent reason, it became difficult for the men to make out. The compressed air pressure was boosted and the paint was thinned. This made it easier for each workman to spray the prescribed quota of pieces, but it was soon noticeable that the consumption of paint and thinner had increased immensely, and rejects were piling up at enormous rate.

The first thing that was noticeable when entering the spray room was that the workmen were shooting a very narrow fan, but when the guns were examined it was found that each adjustment was wide open. My first impression, on seeing the force by which the spray was leaving the guns was that about 45-lbs. pressure was being used. However, the pressure gauge registered 110-lbs.

Unclean Air Causes Trouble

All evidence leads me to believe that dirty air was the source of the trouble. Upon examining one of the filters I found that it contained no filter pad. The paint foreman explained that the filters had proved to be a common source of trouble. They were continually becoming clogged up. So in desperation he had decided to leave the filter pads out all together. Here he made a very grave error, for when a filter pad gets clogged up with rust and dust quickly there is all the more reason why a filter pad should be used.

After placing a clean filter pad

in the filter, my next move was to dismantle a spray gun and give it a complete cleaning. I cleaned not only the head of the gun but I also took the gun completely apart so that the air passages could be thoroughly cleaned. It is hard to believe how much dust and corrosion can collect in these passages. When the paint foreman saw how dirty the gun was he ordered a general cleaning of all spray guns. Needless to say, when the guns were thoroughly clean they shot a good wide fan, and the air pressure had to be reduced.

It is not only necessary to keep spray guns perfectly clean but they should be checked to see if all the joints are fitting properly. A good way to test a spray gun for air leaks is to fill the air hose with naphtha, then connect the hose to the gun and blow the air passage out. If there are any leaks, the naphtha can be seen spurting from these loose connections. This also helps to keep the gun clean.

Where Dirt Entered Air Lines

Naturally, I was curious to find out why the air lines should be so dirty, so I inspected the air compressor room. The compressors were located in the basement next to the coal-fired boilers, with a cinder pile close by. A fireman was in the act of wetting the cinders to prevent them from blowing around. Between the cinders and the steam that was rising from them it could be easily seen why they were bothered with dirty air.

It was finally decided that the compressors should be moved to a more suitable location. All of the air lines were cleaned out, and the compressors and all the air-driven machines were cleaned thoroughly. Filters were placed over the compressor intakes. It was a pleasure to see the spray painters work after they had become clean-air conscious.

Marietta Paint & Color Co. Purchases S.-Y. High Point Branch

The purchase of the High Point, N. C., business of Stille-Young Corp., by The Marietta Paint and Color Co. was announced last month by George A. LaVallee, President of Marietta.

John H. Kalte, Stille-Young manager at High Point, has joined the Marietta organization, together with the sales, production and laboratory staffs formerly employed by Stille-Young. All operations have been moved into the Marietta plant in High Point.

Marietta and Stille-Young were the first manufacturers of wood finishes to establish plants in High Point, so they could better serve the furniture trade in the southeast.

In 1937 the Marietta Company finished their new factory in High Point, and just recently they completed a modern varnish manufacturing addition to this plant. C. S. Beaver, Vice President of Marietta, will manage the newly combined High Point operations.

This transfer will affect only the High Point business of Stille-Young. The trade handled from their Chicago office will be serviced as before.

Equipment for Electro-Plating, Rust-Proofing and Coloring

The Blaw-Knox Co. announces its entrance into the production of equipment for the electro-tinning of steel as well as other continuous electro-plating processes through the acquisition of the Electrochemical Processes Co. of Youngstown, Ohio, which will be operated as the Electrochemical Processes Division of the Blaw-Knox Co. J. S. Nachtman, president of the Electrochemical Processes Co., will be in charge of the new Division with offices at Groveton, Pa., P. O. Box 1586, Pittsburgh, Pa.

The new Division will also produce equipment for continuously plating tin, nickel, brass, bronze, terne plate, copper, etc., on steel and for the continuous cleaning and pickling of strip, sheet, and wire, including rust-proofing and coloring.

The buying and selling of finishing materials, equipment and supplies involve transactions that are very important to the men entrusted to this responsibility and to the companies which they are representing.

Some Buyers I Have Met

BY J. RAY BURNS

LONG BEFORE any salesman has been in the field long enough to be called a veteran, he will have learned to quickly classify the men he tries to sell. The mannerisms and the first few words a buyer speaks enables the experienced salesman to place him in his proper group. He will then very nearly determine which approach will gain most favor with the buyer.

There was a time when selling goods was not so reputable a profession as it is today. The old time drummer had himself to blame for this. There were far too many cases of the city slicker looking for suckers. This caused many buyers to assume a bellicose attitude toward all salesmen. This, fortunately, is not the attitude of the modern buyer. He has learned to depend on the well trained and intelligent salesman for much valuable information and has learned to quickly get rid of the salesman who can not help him. He realizes that some salesmen contact other members of his particular industry and so, are kept uptodate on matters relating to his business.

There are still a few *Belligerant* buyers. This fellow usually has an inferiority complex, easily detected by the salesman, and tries to bolster it with an antagonistic or superior attitude. He does not unbend enough to learn whether the salesman can help him. When he does engage a salesman in conversation, he often turns it into a conflict that is satisfied only through a victory by himself.

The *Self Important* type loves the sound of his own voice. He is so busy selling himself to the salesman that he has no time to hear what the salesman has to say. He usually (in his own mind) knows more about the salesman's line than the salesman knows and just must air his knowledge. This buyer is usually quite young and, in many cases, has inherited his business or position from his father. As a rule, he did not have to struggle to get where he is.

You have met the *Weeper*. He unloads all his troubles—business or personal—onto the shoulders of each salesman who calls. Since he takes the cares of the whole world onto himself, he finds plenty to cry about. I have in mind one prize *Weeper* who always had a lobbyful of salesmen impatiently waiting to see him.

Recently, I called there on a very hot humid afternoon and stewed in the lobby of his office while he spent nearly an hour telling a hard luck story to each caller. Each salesman gallantly shared his gloom, agreeing that all was very dark, and so, gained his everlasting friendship. He told me that today that in future I would meet his successor. He was being transferred to the factory office as a trouble shooter. I wept too; but secretly it was for joy as I knew that at last he would find enough grief to make him very happy.

The *Moocher* is a very small soul. His hand is always out for a luncheon or ducats to the ball game. He has been too lazy to become successful enough to buy the thing that he likes and so, places his business with the salesman who is willing to pay the highest price to obtain an order.

This sort of petty graft died down during the depression. I hoped it was for all time. With returning prosperity, however, I see it again.

Have you met the *Statistician?* He is a petty clerk at heart; wonders vaguely, sometimes, why he hasn't progressed more rapidly. He is so busy keeping records that he misses half of the really big opportunities. He usually has a wealth of data at his finger tips, but too often, it is the kind that no one uses.

The *Indifferent* buyer who reads the paper or talks golf while a salesman cools his heels in the waiting room, is probably just as wasteful of his employer's time. Sometimes he does routine work 15 or 20 minutes just to impress the caller with his importance and demonstrate that he is a very busy man. He usually deceives only himself.

There is the *Smug* buyer who is satisfied with his present setup. He tested samples several years ago and knows that he now has the best that can be had for his purpose. He entirely overlooks obsolescence. It is, of course, possible to try too many things and never settle on one. Keen competition during the depression caused changes in most things and unless a buyer is aware of this, he may miss something good.

One such buyer used a certain clear lacquer on furniture. It worked just to his liking and he insisted that there be no change in it. The salesman supplying the item urged him to try a new lacquer, much higher in solids, at the same price but was always overruled on this suggestion. This foreman recently left and his suc-

ADVERTISING PAGES REMOVED

cessor is now able to eliminate a coat of finish with the newer lacquer.

Happily, with buyers, as with salesmen, there are some *Good* ones. I have in mind the purchasing agent for a large manufacturer of metal specialties in a mid-western city. This man and his assistants buy very l a r g e quantities of s e v e r a l hundred items, ranging from screws and raw steel up to motors, machinery and paints.

When you enter the main lobby of this building, a receptionist fills out a form with the name of the caller, his firm name, the item that he sells and the name of the buyer for that particular item. The form is numbered so that the buyer and caller will know who is to be interviewed next. The caller is then directed to the purchasing department waiting room.

This waiting room is divided from the purchasing department only by a railing. The caller can see that the buyer is a busy man and when his interview time comes he is less apt to engage in long-winded conversation. He can see that the buyer is engaged for the present and will see him in his proper turn.

The buyers here see each caller as quickly as possible. They have designated interview hours and use this time for interviews. Their routine work is done outside of interview time. They realize that the average salesman's time is valuable and try not to waste it. Neither is the caller permitted to waste their time. Very little time is wasted on sports and politics. The caller is encouraged to immediately state his business and the buyer terminates the interview as soon as he knows that he has all the worth while information that the caller can give him.

Every one who calls here is given an interview. If the buyer has no use for what the caller is selling, the interview is very short. If the salesman is one who calls here regularly, he is on the same friendly basis as with some of his less business like customers. These b u y e r s become personal friends of many of the salesmen who call on them. They meet socially outside of business hours. The buyer does not accept favors from the salesman, however, without returning the favor.

This purchasing organization is exceptional. I know many others, both large and small, who have some of the good features of this one. I do believe that the main principles that govern this department may be used in any business, regardless of whether the head of the business is the b u y e r or whether b u y i n g is done by a trained purchasing a g e n t, the superintendent or a foreman.

Hilo Representative Dies

Mr. Harry N. Wieting, New England representative of the Hilo Varnish Corp., died on July 7. He developed pneumonia after an automobile accident in which he was critically injured and his wife was killed on June 27. Mr. Wieting was associated with the paint industry for many years. He is survived by a son, H. N. Wieting, Jr., of Toledo, Ohio.

Air-Conditioning Publication

"Trane Weather Magic" is the name of an 8-page monthly publication printed in two colors and containing illustrated write-ups about modern air-conditioning installations in all kinds of buildings. It is quite attractive and interesting. Copies can be obtained from the Trane Co., La Crosse, Wis., or from one of this company's business branches in any of the principal cities.

Paint Shop Supervision

Find out which workmen are best suited to certain operations in the finishing process, delegate the work to those best qualified; then supervise and inspect their workmanship and the material to see that it is of high quality.

BY E. A. ZAHN
Works Laboratory
General Electric Co.

IT IS GENERAL practice in many of the larger paint shops to include paint-shop supervision with that of assembly work. In this practice, however, the foreman must generally depend on a certain painter for all information regarding that work. If such is the case, then there are very often conflicting ideas as to the proper procedure because each workman is of equal rating and hesitates to perform his duties if they are outlined by his fellow workman.

A definite improvement in conditions and finishing-room results could be had by having a supervisor familiar with this work devote his entire time to finishes. The workmen, in nearly all cases, would cooperate to the fullest if this arrangement could be brought about.

If the volume of production is too small to employ a supervisor for finishing alone, then probably the next step would be to place the most reliable workman in a position whereby he would be considered as a crew leader in order to obtain the cooperation of his fellow workmen which would surely result in noticeable improvements.

Due to the continued development of finishing materials, there is always a possibility of suggestions from the workmen whereby the work can be improved or accomplished in less time, or perhaps at less cost. In order to obtain these profitable ideas, some of the shop supervisors have found that there is nothing a workman likes better than to feel that he is allowed to work on a development which has been branded as "impossible" by someone else. This scheme adds interest to the work and very often brings surprising results.

Assign Each Man a Specific Kind of Work

If a group of ten or more workmen are employed in one department, it is well to assign each one to some particular part of the work, such as filling, prime-coating and finishing. In this way each individual has an equal opportunity of being outstanding in his particular duties. The principal reason in this kind of a set-up is to promote interest in the work which is so essential in all branches of painting. Each operation is more or less an art in itself and it should not be diffi-

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Egyptian Black Lacquers give a fine smoothness and jetness . . . They are available in standard types for spraying, dipping, and brushing for both indoor and outdoor exposure . . . Furnished in various degrees of finish from a very dead black to a high gloss . . . For use on metal, wood, leather, rubber, paper, glass, and a host of other products . . . Egyptian Black Lacquers are also available in special formulations to meet individual requirements.

A booklet describing Egyptian Black Lacquers and their application with suggested uses will be sent free and postpaid to interested manufacturers and finishing shops. Address

The Egyptian Lacquer Mfg. Co.

Rockefeller Center

New York, N. Y.

EGYPTIAN FINISHES

cult to impress a workman that the first operation is equally as important as the last.

In some of the large manufacturing companies, each group of painters takes examinations, as set forth by the laboratories, to determine which of the men are best qualified for various types of work. After the grading and assignment of each man, they are in a much better position to familiarize themselves with their assignment and as a whole, this type of shop arrangement requires less supervision.

The lowest grading should be classified as prime-coating, as the one important factor here is that of protection; in order to obtain this, an operator need only learn to apply the material of a uniform thickness. The second grading should be that of filling, as the operator must have a good conception of the finished appearance, besides being familiar with the various methods used in applying the fillers. The sealing paints can be applied by either the second grade man or the finisher.

In finishing material applications, the greatest care should be taken in selecting the proper men, as they will be directly responsible for the finished work and they should be allowed to reject, before finishing, any pieces that are not properly prime coated and filled. After these three classifications have been made, there would be left only those who did not qualify for either type of work and should be assigned to such work as sanding, cleaning and polishing and should be under the supervision of the workman who is next to receive the parts.

Treatment to Prevent Veneer Checks

CHECKS or cracks in finished crotch, swirl, butt and other shaky texture veneers can be prevented by treatment of the raw veneer with a preparation designed especially for this purpose. It is claimed to be much better than ordinary glue sizing . . . . is transparent and produces permanent results. According to the manufacturer:

"The sanded panel is sized with 'Glue-Life' sizing and allowed to dry for one hour; then the size is waterproofed with a coagulant applied by spraying or brushing. Both are dried for two hours and sanded smooth with No. 6/0 sandpaper. Finishing is performed in the usual manner.

"This method has been in use since 1930 by hundreds of finishing departments as a sealer for eliminating checks in fancy grain panels and for prevention of absorption of finishing materials by such end-grain panels."

High-Intensity Mercury Lighting

A new folder illustrating applications of high intensity mercury vapor lighting in industrial plants is announced by the Lighting Division of the Westinghouse Electric & Mfg. Co., Cleveland, Ohio. It illustrates accessories for both mercury and the complete line of equipment and combination mercury-incandescent units.

The Use of Mica in Paints

An 8-page booklet, under the above title, explains and illustrates practical and technical information about the possibilities and results of using mica in various paints. It is published by The English Mica Co., 220 E. 42nd St., New York, N. Y.

Heat • Humidity • Spotting Out

The bug-bear of finishing departments during the summer months. It is during this period especially that

1617

Reg. U. S. Pat. Off.

CLEAR METAL LACQUER

proves its superior value. The spotting out of finishes on cast metals and the crystal spotting of oxidized finishes will be reduced and possibly eliminated by the use of *1617*—the Original Non-Spotting Lacquer.

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It is crystal clear, hard, durable, has excellent adhesion and does not turn green upon exposure.

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THE STANLEY CHEMICAL CO.

EAST BERLIN, CONN.

LACQUERS - SYNTHETICS - ENAMELS - JAPANS

A Subsidiary of THE STANLEY WORKS, NEW BRITAIN, CONN.

"Nu-Wype" Oil Stain

A new type of oil stain recently announced, gives great depth of color, uniform penetration, and is remarkable for its ease of application.

According to the manufacturer, this stain uniforms the color of the wood so well that shading stain is seldom if ever needed, and it is so easy to wipe that the cost of labor and rags for wiping is greatly reduced. The stain is called "Nu-Wype" and is manufactured by Reliance Varnish Co. Inc., 915 E. Kentucky St., Louisville, Ky.

"Nu-Wype" stains are particularly adaptable for use on close-grained hardwoods such as gum, poplar, basswood, maple, willow, tupelo, beech and birch.

Air Dusting Gun

A new air dusting gun, designed to meet the demand for a more compact, lower-priced duster, has been announced by The DeVilbiss Co., Toledo, Ohio. Known as Type DGA, this improved gun has an air capacity equal to that of a large standard model duster, yet is small enough to be held completely within the hand.

The gun is quickly and easily operated by simply closing the hand around the gun in any reasonable position, and squeezing the one-piece thumb button and valve stem located in the middle of the gun body. An opening is provided in the zinc die-casting body for hanging the duster on a hook when not in use. A removable brass nozzle is threaded into the gun body.

For blowing off dust quickly.

High pressures direct from the main air line or lower pressures may be used in operating the duster, which has an air consumption of 13-cu.ft. at 80-lbs. pressure. New straight line design puts the nozzle practically in line with the air hose, permitting use of the tool in close quarters without kinking or bending the hose.

Exterior parts of the gun are dull nickel plated, rounded to fit the hand comfortably. Air valve spring is cadmium plated to prevent rust.

New...

MATERIALS
SUPPLIES
EQUIPMENT

A New Parkerizing Process

Announcement has just been made by the Parker Research Laboratories of a new Parkerizing process, which combines all the effectiveness of the older process with some vitally important new qualities that result in increased efficiency and lower cost of application.

Ever since Parkerizing was first accepted as a finishing and rust-proofing method, by manufacturers of iron and steel products, the Parker laboratories have been constantly searching for improvements. Important steps were made in this direction from time to time, but now a new advance is announced that will give this process greater acceptability and more widespread use.

Among the more important im-

provements is the matter of processing time. Instead of the 60 to 90 minutes being required, the processing time is now reduced to 30 minutes.

Another feature that contributes to economy in application is the reduction of operating temperature. The new processing solution reacts at 180°F. instead of 210°F. formerly found necessary, resulting in a lower heating cost.

The improved liquid chemicals develop less sludge in the processing tank and produce a finer grained, smoother coating. This assures less change in metal contour and a minimum of build-up in fine threads. This is important on screw machine products, or articles on which close tolerances must be maintained.

The shortened processing time, reduces the size and cost of processing tanks necessary to handle any stated volume of work and, of course, reduces the cost of installation. This will be of interest to the larger manufacturers where tank costs are a considerable item.

The protection from rust, afforded by Parkerizing, is acceptable to many industries. The automotive industry is one of its largest users. The electrical industry, manufacturers of office equipment, builders of architectural iron and steel, and scores of others find Parkerizing to be well suited to their requirements on many items. The Parkerizing Process provides substantial rust-proofing effectiveness.

Al. Sparkle Rip-pl

(Low Bake; Oil Type)

A fine wave line wrinkle finish with glistening silver specks can be produced with finishing materials developed by Hilo Varnish Corp., 44 Stewart Ave., Brooklyn, N. Y.

The method of using it is to add a brilliant coarse aluminum powder to the wrinkle finish material, mixing the material thoroughly and then reducing the Sparkle Rip-pl 7/1 with naphtha. A full even coat is sprayed on and then baked for 1½ hours at 200°F. This material is available in several attractive colors.

The Sparkle Rip-pl may be used on any non-porous surface. It is well suited for heating and air-conditioning equipment, toys, novelties, etc. This finish is proof against alcohol and grease; it is moisture and oil resistant. The metallic appearance may be varied by increasing or decreasing the quantity of aluminum powder used to the gallon.

Material Containers for Spray Guns

An improved quart-size paint container and special cover for use with siphon-feed spray guns is announced by The Alexander Milburn Co., 1422 W. Baltimore St., Baltimore, Md.

The quart aluminum container has straight sides reinforced by a steel band with the aluminum spun over it; has no obstructions inside or out, and is large enough for a man's hand to be inserted with a wiping cloth. This cover is a strong, lightweight, non-corrosive stamping which locks in any position on the circumference of the aluminum container. The lip has a flange which fits over the rim of the container

Either container can be used.

and seals against leakage with a fluid-resisting gasket.

The lock is made of steel spring clamps, with wide lips, fitting the circumference and clamping under the steel band of the container. These clamps open and close scissors-like, revolve in any direction, and are tightened with a generous locknut.

The M-Lock cover fits the standard quart paint cans of the leading manufacturers of paint. A shorter siphon tube is provided for use with these cans which are approximately 1-in. shorter than the standard aluminum siphon container furnished.

The M-Lock cover permits the use of paint cans usually discarded, and enables the user to quickly make many changes in colors without cleaning out standard containers. New cans of the commercial type can be bought at a very low price.

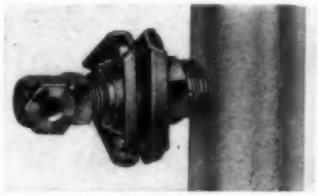
Nuoil Filler

V. J. Dolan & Co., Chicago, Ill., manufacturers of wood-finishing supplies, announce the development of a new product called Nuoil Filler. They claim that after extensive tests they are convinced Nuoil Fillers will eliminate quick-setting and hard-cleaning, which some finishers are complaining about. It is also claimed that filling costs can be greatly reduced and that results can be improved through the use of Nuoil.

According to the manufacturer this is the first time that a filler of this particular type has been offered to the trade.

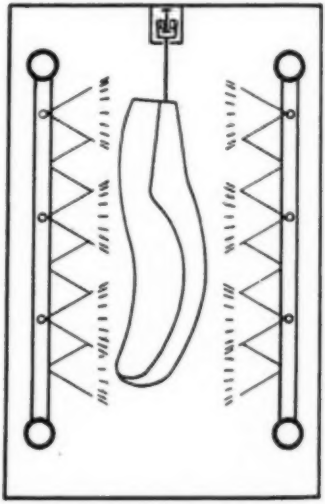
Adjustable Joints

In installations of equipment for cleaning metal by any automatic or continuous multiple spray process, it is often necessary to do the final positioning or adjusting of spray nozzles after the installation has been made. Here is where adjustable joints can be used—namely, between the header pipe and the spray nozzles, see illustration herewith. After the spray nozzles are correctly adjusted for direction of spray, the adjustable joint is tightened up to lock the spray nozzle in position.



Adjustable joint attached to pipe or header.

Improved adjustable joints like the one illustrated here are offered by Spraying Systems Co., 4922 W. Grand Ave., Chicago, Ill., in the following pipe connections: ¼x¼-in.; ⅜x¼-in.; ⅜x⅜-in. and ½x⅜-in.



A typical example of a cleaning installation where adjustable joints can be used effectively between headers and spray nozzles.

"Varmaco"—a New Finish

A new dull varnish for the furniture industry is announced by the Marietta Paint and Color Co., Marietta, Ohio, and High Point, N. C. According to the manufacturer, this new modern dull varnish will not fade away after application for it maintains its "high solids appearance."

The finish dries dust free in 45 minutes to one hour; hard enough to handle in 2½ to 3 hours; and hard enough to rub after overnight drying. It dries clean and clear; gives maximum uniformity and fullness of finish; and permits application of a heavy wet coat without sagging, making possible a satisfactory depth of finish with one coat of a suitable sealer. "Varmaco" is unharmed by a severe alcohol and water condition, and offers unusual resistance to abrasion and hard wear.

Restores Old Chromium Plated Surfaces

A new method for removing rust from chromium plated auto parts and protecting the chrome so it stays bright and shiny is announced by the Du Pont Company.

The new development is marketed by du Pont in the form of a Chrome Refinishing Kit, which contains a can of protective lacquer, a tube of a specially formulated paste cleaner, and a brush for applying the lacquer.

The lacquer is based on one of the methacrylate resins. . . . The new chrome lacquer dries in 15 minutes, forming an invisible film which protects metal bumpers, radiator shells, hub caps, etc., against rust and corrosion caused by moisture, salt spray, fog and road chloride.

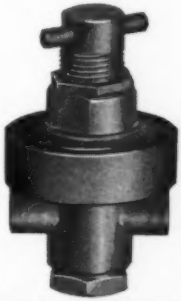
The chrome parts should be cleaned first with the cleaner, which will remove rust and stains, restoring the original luster of the chrome. It leaves no oily film to prevent the lacquer adhering. The Methacrylate lacquer should then be applied with a brush. The film which it forms is colorless and practically invisible, giving the metal a waterproof coating which will not chip or peel from exposure. Tests to which the lacquer was submitted before its release indicated that, after 8 months' exposure to the elements, sections of metal panels protected with this lacquer were free of rust and in excellent condition, while unprotected areas were badly rusted.

The product is not restricted to automotive parts nor to chromium plated metals. The lacquer gives protection to brass, bronze, copper, steel, nickel and other metals, such as building hardware and household accessories.

Air Regulator

The C. H. Dockson Co., 2885 E. Grand Blvd., Detroit, Mich., offer a new "38" model regulator for reducing and stabilizing air pressures in compressed-air pipe lines.

According to the company's literature, this new and different "Midget" regulator is made possible by the patented Dockson process of die casting alloys into finished regulator parts. Precision and savings in man-



Model 38-S. This one has ¼-in. female pipe thread in both side inlet and outlet.

ufacture now revolutionize the apparatus for control of air pressures through the reduction and stabilization of these pressures. Time-tested and proven principles of pressure regulation are incorporated in the Model 38 regulator to make it safe, accurate, and dependable in operation, with a large volume delivery if desired.

In addition to the standard model shown here, special adaptations are easily made. Gauges may be installed in all regulators; a double outlet may be provided if desired; special brackets may be attached; a permanent adjustment device may be incorporated, or ⅛-in. pipe thread connections may be furnished.

Spray Gun with Snaplock Cup

In announcing their new type BU high-production airbrush with new snaplock, the Paasche Airbrush Co., 1911 Diversey Parkway, Chicago, Ill.,

Easy to remove; easy to clean.

says that the new snaplock cup revolutionizes all cup design. Outstanding features are:

1) The new Snaplock cup is fast and easy to handle. With one downward motion of the snaplock cover, it grips the cup instantly—a one-hand operation.

2) This cup is easy to clean. The cover may be removed with one hand, simply by turning the knurled grip nut and touching the grip release.

3) This cup has an interchangeable cover for pint and quart cups; both the pint and quart cups have a wide opening for easy cleaning.

4) As soon as the snaplock cover is placed over the cup, there is a click and the cover is on and remains on, even if operator fails to promptly tighten the knurled grip nut. After this knurled nut is turned down, the cover cannot possibly leak. Thin gaskets are no longer a nightmare with this take-up feature.

5) Less than one second is required to detach or attach cup.

6) The continuous rim provides a positive seating—the clamps will not chew or cause low spots—and there are no pegs to work loose or replace. No projections to pick up lint or threads when cleaning cup.

Fluid Circulating Pump

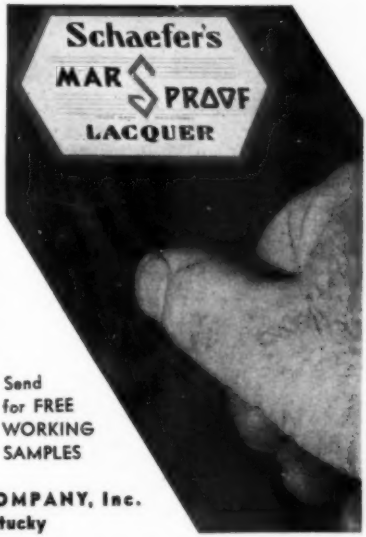
A self-contained fluid-circulating pump, operated by electric motor or by air motor drive, is announced by the Binks Mfg. Co., 3132 Carroll Ave., Chicago, Ill. The new unit is designed as an economical and safe method of delivering clear lacquer, varnish and other non-pigmented finishing materials from the original shipping container to the spray gun.

It can be readily changed from one drum to another in a few seconds. The circulating pump gives results similar to those obtained with a pressure feed tank. The pump also eliminates the necessity of transferring material from the original shipping container, and makes possible an economical pressure-feed system direct from the drum. Motor pump, relief valve and fluid feed regulator are mounted on a steel

HERE it is!

cannot be marred or scratched

A lacquer finish that cannot be marred or scratched with the thumbnail, or other destructive agencies—a much tougher piece of goods than the ordinary lacquers. It produces a splendid transparent finish of full depth on maple, walnut, gum, mahogany and other cabinet woods... It is made in either the Clear Gloss Rubbing or the Satin Finish. Mar Proof Lacquer Sealer is recommended for the first coat.



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An all-metal gray primer for such metals as steel, die cast, etc. Quick drying — can be recoated within 30 minutes either with Lacquer or Synthetic materials. Extreme resistance in Salt Spray test as well as bending and adhesion tests.

We invite inquiries from interested manufacturers of metal products.

H. V. WALKER CO., Elizabeth, N. J.

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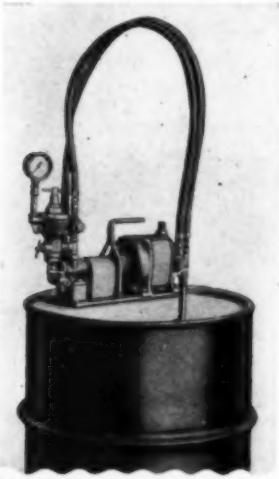
New England Warehouse, Brown & Dean Co., Providence, R. I.



Mechanism can be placed on head of shipping container or on wall bracket.

base plate which may be secured to the top of the drum or attached to brackets fastened to the wall above the drum.

Ethyl Lactate
(A Useful Solvent)

Ethyl Lactate, announced by Commercial Solvents Corp., Terre Haute, Ind., is a water-white liquid with a mild pleasant odor, completely miscible with water and with most organic solvents including the aromatic and petroleum hydrocarbons. It is an excellent solvent for nitrocellulose . . . . It finds use in brushing lacquers and in other special lacquers where slow drying and good flow are desired. It is especially valuable in crystallizing lacquers, as it promotes the formation of large uniform crystal patterns.

Like methyl lactate, it is a good solvent for cellulose acetate with a high tolerance for diluents, and provides excellent flow-promoting and blush-resisting characteristics. It is also a solvent for other cellulose esters, cellulose ethers and for a variety of gums and resins. Its properties recommend its use in lacquers, dopes, inks, synthetic finishes, varnishes and similar products.

Paint Resists Chemicals, Water and Acid

Baer Bros. (Paint and Varnish Mfrs.) 444 W. 37th St., New York, N. Y., have just placed on the market their chemical, acid and waterproof paint. They recommend it as the ideal finish for protecting metal and wood from the effects of most alkalies and acids, as well as from fumes and steam from various processes.

The new paint is excellent for general factory maintenance — for both exterior and interior exposures. It can be readily applied on machinery, walls, fire-doors, pipe lines, or any other type of equipment, by either brush or spray application. It is furnished in any color or shade.

Mesh Conveyor Belts

Conveyor belts or aprons of metal mesh are offered for use in metal cleaning and metal finishing operations by the Cyclone Fence Co., Waukegan, Ill.

U. S. S. Cyclone metal conveyor belts come in two types; chain link and flat wire. They can be built to suit special requirements. They provide an efficient economical means of product handling and conveying.

Cyclone conveyor belts can be furnished in that particular metal which will most successfully resist rust, chemical or acid corrosion and stand high temperature conditions.

Attractive illustrated circulars give descriptive and engineering information in reference to various types of woven and link metal conveyors for industrial use.

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The author has actually been doing this work for others for many years and he knows whereof he speaks. No one has ever gone into the subject of metal finishing more deeply than he nor has the subject ever been explained so clearly and effectively. This book was eight years in preparation.

Color plates and a multitude of tables and illustrations make the text even more clear and understandable. The volume is bound in harmony with its companions of the Practical Finishing Series and makes a rich, attractive appearance . . . 22 chapters.

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Questions Answers

Why That Finish Turns White

Referring to the question and answer on the above subject, as published in July issue, page 55, the "turning white" of dried and aged finish films is, as you surmise, an effect of atmospheric moisture. Its occurrence will depend not only on the amount of moisture and the accompanying temperature conditions, but also a great deal upon the nature of the film and upon various polishes and cleaners which may have been used on it.

This whitening has been explained as a formation, in the pores, of the film of a soap or emulsion by a mixture of moisture with oils or resins, either peculiar to the film or as added by polishes.

The removal of the white condition is relatively simple, being accomplished by a light wet sponging with alcohol, which will dissolve the emulsion; or by an application of dry heat which will evaporate the moisture. Heat may be applied by placing the piece in a hot room or, more locally, by use of a small portable electric room heater.

In general such a condition should be prevented by the use of a hard wax as a final finishing operation. The application of this wax will decrease the porosity of the film and increase its water resistance. Pieces waxed at the time of finishing and kept waxed should not turn white, and after removal as above, the periodic use of a good furniture wax should prevent its recurrence.—W. T. SMITH.

In reply to the inquiry on page 55 of July issue of INDUSTRIAL FINISHING, wherein J. J. Co. asks why finishes turn milky white, inasmuch as this question is asked by a furniture dealer rather than a furniture manufacturer, there are a few points that should not be overlooked.

First, what is used to polish the furniture? If wax is used, with what is the wax cut? It is possible that the reducing agents or ingredients used to compound or thin the wax are too harsh.

If furniture polish is used, is a proven product used? If this is the case there should be no trouble, but if some homemade concoction has been formulated, I would most certainly make a test by applying each ingredient of the formula separately to a varnished or lacquered surface. In this way the milky white should be produced quickly. It is quite possible that the polish contains enough oils to act as a slow resistant, the result being that the offending ingredient does not attack the finish at once.

There is another cause of a finish turning milky white that would bear mentioning—a gas-heated, damp building. When the trouble is caused by this condition, the surface appears to have a coating of film, part of which can be removed by washing with soap and water. It is usually necessary to sand or remove the

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Where the maximum dollar value in solids and smooth-flowing solvents is required; where perfected resistance to cold-checking, abrasion, moisture, printing; beverages and light are desired, we shall be more than glad to submit samples for any desired test.

Within the comparatively narrow price range for this type of lacquer, we feel we can and do supply a material unsurpassed for its specific purpose.

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SUNOCO SPIRITS

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finish completely, depending upon the depth of the attack.

When refinished furniture turns milky white you may very readily suspect that the varnish remover has not been thoroughly removed. Shellac seals the varnish remover for a while, but atmospheric conditions will eventually cause the varnish remover to creep through the shellac and attack the finish.

If, after a series of eliminations, it is found that none of the foregoing causes are responsible for the trouble, then you can suspect that the trouble is caused by an improper bleaching method during manufacture. It may be that very dry lumber was used and when bleached, the bleaching agent penetrated deeply into the pores of the wood. The excess bleach may not have been washed out sufficiently or the furniture may not have had sufficient time to dry after bleaching. Quite often sealer covers the trouble for a while, only to have the difficulty show up when the sealer has become undermined.

In order to make a quick test to see if the trouble is caused by the bleach, apply a finish coat directly to a bleached piece before it has been filled or sealed.

If the trouble does not show up in the bleach, then try applying the finish coat directly to a filled piece that has not been sealed. In making tests, I find it a good policy to make the tests on objects that are going through a natural course of production. I find it much easier to ferret out the trouble this way. If sample pieces are made to test, quite often they are not finished in quite the same manner as the regular production pieces.—H. H.

Impregnating Wood with Stain and Wax

Editor's Note: In order to reveal some needed information about a positive and economical method of forcing a stain or thin warm wax deeply into parts made of wood, or other porous material, we are publishing the following excerpts from the bulletin of a manufacturer of centrifugal machines which are designed and built especially for this purpose:

The machine develops a pressure that is not uniform on all sides of the articles being impregnated. Pressure varies from point to point. It is this unbalanced force, due to variation in pressure, that produces the high rate of penetration so pronounced in securing a positive flow of solution straight through a permeable article in the direction of reduced pressure. The fluid pressure builds up with an increased speed of rotation and increased diameter. In all instances it is greatest toward the rim or wall of the revolving bowl, and it decreases gradually toward the center.

The pressure on the object is the same on the top and bottom at corresponding points; likewise, it is the same on the right and left sides at corresponding points, but it varies at different points radially to and from the center. This results in a tremendous hydrostatic squeeze from all sides, but it is much greater toward the axis than away from it.

The time required for complete impregnation for certain articles depends on the difference in pressures along a given distance, the penetrability of the article, and on the characteristics of the impregnating fluid or compound.

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In these days of much open display, eye appeal gets first attention, way ahead of utility value.

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See this *Sparkle Rip-pl.* Send for Color Chips or Sample to apply to your product.

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Gentlemen: We'd like to try a free sample of Hilo *Sparkle* Rip-pl.

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City and State.....

IP—AUGUST

CHECK COLOR WANTED

Brown
Black
Red
Gray
Olive Green
Light Jade Green
Pale Ivory

The value of this pressure method is evident, as in the case of wood, where fluid may penetrate along the fibers with approximately 1/40th of the pressure that would be required to penetrate across them. For example, if a piece of wood 4-in. long is placed radially in the bowl of a centrifugal machine to be treated by this method, the pressure on the outer end at the top, bottom, both sides and the end itself would be 94-lbs. (under certain conditions). This pressure is reduced gradually from 94-lbs. at the outer end to 80-lbs. 1-in. in; 64-lbs. 2-in. in; and 52-lbs. 3-in. in, until finally at the inner end it is 40-lbs.

If this piece of wood were free to move, it would be projected toward the center with a high velocity because the pressure urging it that way is 54-lbs. (94-40) per square inch. Hence, strong guards or restraints are needed to keep it in place and if it stays in place, it is plainly evident that the solution will force its way in and through the wood.

The pressure pattern also applies in the case of rolled metal-foil condensers, rolled paper tubes and the like. In a particular case, this pressure varies from 100 to 32-lbs. per square inch through a useful zone of 5-in.; thus, the pressure gradient through this zone has an average value of 13.6-lbs. per square inch through every radial inch.

One important and unique feature of this method is the positive manner of expulsion of air from the article. Air must be removed, and by this method it is forced ahead of and replaced by the impregnating fluid. If a closed glass jar or bottle full of a solution is inverted, bubbles of air can be seen rising rapidly upward, being displaced by the fluid because of its greater density.

By the centrifugal method of impregnation, air bubbles are urged out of the interstices of the submerged objects and then out of the fluid from 200 to 500 times as vigorously as in the case of the inverted jar. Thus, in treating electrical coils in varnish by this method, air is expelled and the wire is entirely enveloped with varnish, at an intense pressure, over its whole length.

The impregnator bowl is provided with a quick-operating sealing cover to prevent leakage. A central opening in the cover of the bowl permits filling with the solution while revolving. Objects are handled in and out loosely in baskets, or on racks or forms that may be loaded outside and lowered into the bowl. Supplementary equipment, steam coils in the outer curb of the machine, tanks, pumps, etc., well designed for compactness, utility and appearance present a snug closed system. Centrifugal drainage may, as an additional operation, be combined with impregnation. This latter may be applied for surface draining and cleaning or, if necessary, to the reduction of interior deposits from saturated articles. In combination, impregnation and extraction make for extreme uniformity and dependability of certain products.

Flameproof Fabrics

A news release from a company in New York City announces a clear, neutral, non-poisonous liquid called "Ignex" which can be easily applied by dipping or spraying to render all kinds of fabrics flameproof. It harms nothing that will not be harmed by water, does not "powder off" and is invisible after being applied.

ECLIPSE B+ ENDS "Cup Gun Fatigue!"

The Eclipse B+ unit separates the gun from the container on small jobs. You can reach out-of-the-way places inaccessible to the attached-container type or cup gun. You don't have to hold your spray operations back with a container of material on your gun. Use the Eclipse B+ unit. Available in 1- and 2-quart sizes for use with any Eclipse gun. The durable lightweight control head is fitted with a regulating valve, air gauge, air shut-off valve, release and safety valves.

ECLIPSE AIR BRUSH CO. 391 PARK AVENUE NEWARK, NEW JERSEY

CHECK THESE TAPES—TO HELP SOLVE YOUR INDUSTRIAL ADHESIVE TAPE PROBLEM

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All Tapes in ¼" to 36" wide in 60-yard rolls

INDUSTRIAL TAPE CORPORATION
NEW BRUNSWICK, N. J.

Graining Over Dyed Woods

ALTHOUGH graining and graining plates are nothing new in the furniture or allied woodworking industries, they are becoming daily more significant as a method of finishing materials to satisfy limited buying budgets as well as critical tastes. Accordingly, many changes have been effected recently to improve the work done with graining plates, and much finer clearer finishes are now obtainable for gum, tupelo, magnolia and other hardwoods.

The original system used in graining wood by means of plates was based on pigmented ground coats, which system is still being used satisfactorily by some factories today. However, such a treatment results in the familiar, painted appearance which we can now largely eliminate.

With the new improvement in dyes, both light and dark shades of the sap parts of woods can be finished in clear, lustrous tones of walnut, mahogany, satin wood, etc.—ART C. HEBERER.

SOLVENTS AND THINNERS RECOVERED . . . from
Sludge, Waste, Wash, Spoilt Lacquers
Each customer's shipment, whether one drum or a carload receives proper and SEPARATE treatment.
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Bull Dog Quality Lacquer Sticks
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The perfect Lacquer Burning-in Cement. Will not raise or soften and is not affected by any type of lacquer.
LARGEST LINE OF COLORS
Write for Color Card, showing both Lacquer and Shellac Stick Colors and for the name of nearest distributor.
UNIVERSAL SHELLAC STICK CO., Inc.
28 Howard Street New York, N. Y.

Letters from I. F. Readers

(Continued from page 8)

coils, and at the present time we are handling zinc, brass, steel and copper.

You can appreciate that since it is necessary for us to polish the metal before we plate it, we should be in an excellent position to satisfactorily polish aluminum for this company.—American Nickeloid Co.

In the June number, we notice on pages 6 and 8, an inquiry concerning the polishing of sheet aluminum. We have a machine for polishing all kinds of metal. In order to understand what your correspondent wants done, will you please put us in touch with them?—Growt Machine Works, Inc.

Silk Screen Graining

We have been interested in reading the article on page 23 of July issue, written by H. L. Hiett of the Prairie State Products Co., on the subject of Reproducing Wood Grain. We will appreciate it if you will give us the address of this firm.—O. & L. Co. (Furniture Mfg.).

Sound Deadener

We would like to know who manufactures a product similar to that used in automobile bodies for insulation to prevent noise. We trust you will be able to furnish us this information and thank you for your prompt attention.—N. Mfg. Co.

Special Air Filter

If you wish, you may send the party who made the inquiry covering a "Diatomaceous earth candle" compressed air filter (July issue, page 10) the bulletin we are send-

ing you. This is a carborundum candle and does the work without becoming permanently stopped up. —Technical Specialties Co.

Dip Finishing

We would appreciate it if you will please advise us if you know of any books or data published on the subject of the method of lacquering by dipping.—C. Adv. Co. (Signs).

We know of no books devoted exclusively to this subject, but we have sent this inquirer tear sheets of several articles about dip finishing, as published in INDUSTRIAL FINISHING magazine. Also, we have referred the company to some manufacturers of dipping machines.—EDITOR.

Lacquer Sticks

On page 60 of July, 1938, issue, we notice an article by H. F. Dean, with reference to a lacquer stick. Please advise us the name and address of the manufacturer of these lacquer sticks, so we can write them. —D. Chair Co.

Masonite Finish Wanted

We would like to obtain the hardest transparent finish possible to be used on masonite table tops. Our trouble has been in getting a finish as hard as the masonite itself. We would prefer an air-dried finish, if possible.—R. U. Mfg. Co. (Furniture Mfr.).

Luminous Paints

We will appreciate it if you can give us the names and addresses of manufacturers of luminous paints or enamels.—V. I. Mfg. Co. (Metal Novelties).

Equipment Wanted in South America

We would be interested in receiving as soon as possible your catalog and recent bulletins regarding:

Rust-Proofing Machines
Industrial Ovens
Exhaust Fans
Spray Booths

We are assembling completely K. D. automobiles, and in order to speed

Improve Your Finish 100%

MAGIC TACK RAGS remove specks, lint and sand particles—bring out that deep, smooth luster, produce a faultless surface for white or colored finish. Why use "home made" tack rags when you can buy MAGIC TACK RAGS at trifling cost! They are tackier, do not dry—are dust-proof and spontaneous combustion proof. Packed in dozen and gross lots or more. Made only by the

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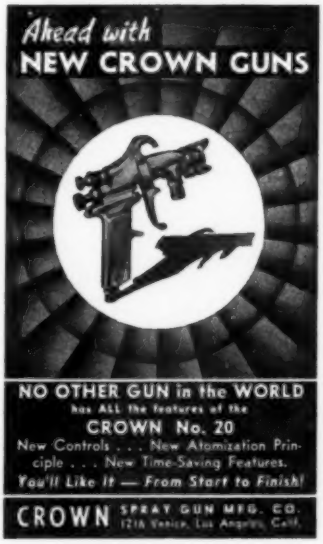
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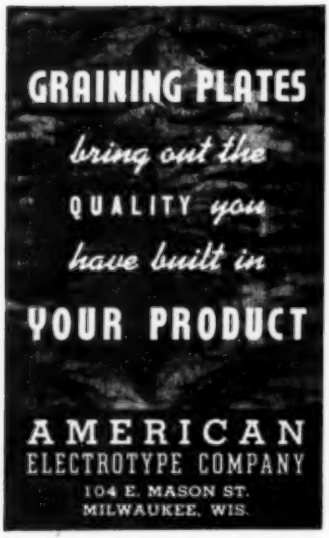


up our production, we must make some improvements in our paint shop. As the maximum temperature of our present oven is 160° F., we contemplate installing a hotter and more up-to-date system of ovens. The K. D. bodies are heavily coated with grease and we would appreciate your recommendations for insuring a clean surface after the removal of the grease.—B. O. N., Buenos Aires, Argentina, S. A.

Aircraft Article

With much interest we have just read the article, "Finishing New Aircraft," in the July issue of INDUSTRIAL FINISHING. In the section on rustproofing is mentioned that there are two such rustproofing materials recommended by Mr. Allen, and following the suggestion of the asterisk, we would be interested in knowing the name of these materials.

Following the rustproofing section, there is one referring to the cleaning of steel and aluminum surfaces on airplanes. We would be further interested to know the materials used in this cleaning process, and to learn if Mr. Allen is familiar with . . . for clearing steel and aluminum. —L. H. Co.

Paints for Cement

If you will give us the name and specific address of the inquiry labeled "M. K., Sydney, Australia," in the June issue this year (page 61) we will give them information likely to be just what they want. We have a number of products that actual service tests over several years proves they are good for raw and aged concrete and for stucco; also, they are waterproof.

We enjoy your magazine every month as much today as the first issue. In fact it is getting better in certain respects and deserves the consideration of all those in the finishing business.—E. C. Co. (Special Equipment & Processes).

Gold Reflectors

In one of the recent issues of INDUSTRIAL FINISHING (March, pages 19, 20, 21) a new type of reflector was described, using a gold-plated surface for reflection. This issue was misplaced before we were able to write for further details concerning the characteristics of the reflector.

We will appreciate it if you will send us the name and address of the

firm manufacturing this reflector so that we can write for further details on it.—E. R. Co.

These gold-plated reflectors are used by the Ford Motor Co., in their baking ovens, and we understand they were made by the Ford Co.—EDITOR.

Copper Plate Graining

We would greatly appreciate your having the American Electrotype Co. communicate with us at the very earliest moment, regarding full information and prices of the "Etched Copper Plate Method of Reproducing Wood Grain." This subject was referred to in INDUSTRIAL FINISHING of May 1938, pages 22 to 25.—O. W. Corp. (Office Partitions).

Chromium Finish on Wood

We would like to learn if it is possible to obtain a chromium metallic finish on wood, and will appreciate your advising us regarding the sources of supply for this finishing material, together with instructions for its application.—A. Q. Co. (Store Fixtures).

Coating Photographs

In your March, 1936 issue, there is an article on "Coating Photographs" on page 46. In my retained copy I find someone has clipped pages 45, 46, 47, 48, 49 and 50, and I have found no one else who has this particular copy. Am wondering if you would have a duplicate, or could send me this article or any other on Coating Photographs.—F. F. Co. (Paints, Varnishes, Lacquers).

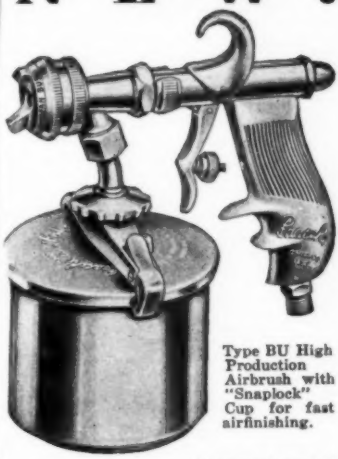
Silk Screen Stencils

We want to get full information about obtaining materials and the application of silk screen stencils.—H. C. Co. (Refrigerators).

Solvent Recovery Still

Would you kindly have the manufacturer of the small solvent reclaiming still, shown on page 30 of the February issue, quote us on same, as well as give us capacity? We would like to have this for electrical operation.—K. H. Co. (Distinctive Metalcraft).

N E W !



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EDITORIAL

Furniture Show in July; Future Trends; Styles; Buyers

The summer National Home Furnishings Show, at the American Furniture Mart, opened with a spirit of optimism unparalled in recent years. During the first week, attendance practically equalled previous all-time records, but in the second week it slowed down. Total registration of buyers was 9064 . . . . 10% under the all-time record established in July, 1937.

Tangible proof of the dealers' confidence that the autumn of 1938 would again see the revival of normal business was given by their orders which, smaller in volume than during boom periods, were nevertheless of a general nature, with liberal sampling of new merchandise and substantial orders for normal requirements. Extreme caution, however, was exercised by the buyers who let it be known that they did not wish to stock heavy inventories in an over-anxious spirit of anticipation, yet wanted to be supplied with merchandise when the buying wave started.

Prices were firm and manufacturers who produced fashion right merchandise, correctly styled and conservatively priced, were rewarded with orders which equalled 1936 volume and in some instances rivalled 1937 peaks.

While many factors were reported to have influenced the optimistic turn of mind of the dealers, and the enthusiasm with which the show was received, most significant was the sweeping trend toward "Swedish Modern" which encompassed and influenced practically every phase of the industry. The new style, which augurs well to be the most successful new style of the decade, arrived and carried with it a market that received it with enthusiastic approval.

Follow Directions When Trying Out New Materials

An experienced man who has been both foreman finisher and salesman of finishing materials writes to emphasize the importance of using new materials correctly and according to manufacturer's directions. He says:

"It is very important that industrial users of finishing mate-

rials observe carefully and accurately the manufacturer's directions for preparing and applying synthetic finishes.

"When a manufacturer's representative sells the industrial user on the idea of using synthetic varnishes, he must and does emphasize the importance of observing special care when applying the material. Often the buyer just turns the new material over to his foreman finisher without giving any thought about the finisher not knowing the difference between this specially made varnish and the material he used formerly. The finisher, in turn, just sprays on a full wet coat as he would with any ordinary varnish.

"The results are that the body is too heavy to allow it to dry, and a report is made to the office to the effect that the material is 'out,' because it dries slowly. On the other hand, if the proper instructions had been given the foreman when the material or sample was turned over to him, the results would have been entirely different — certainly more favorable to the manufacturer of the material.

"Sometimes a new type of finishing material is rejected because men in the finishing room have become so accustomed to using another type of material that they rebel at making any change in their usual routine and methods. For example, after using lacquers for a long time, the men become adapted to the ways of working lacquers and getting good results with them. However, synthetic materials are different. Their drying time is different; also the sanding and certain other features in their handling. If putting in a new material would mean a change in the entire schedule and method of finishing, the whole force of this particular department would probably put up a fight. This is one of the high hurdles that new finishing materials must jump to be accepted. It is practically necessary that the handling of new finishing materials and equipment be entrusted only to expert and intelligent workers, as a small mistake is very costly at times."

To Kill Odors

Where odors in the paint shop, or in some one or more areas of a finishing department, are so strong as to be objectionable, or where the discharged vapors are objectionable to neighbors, it is possible to eliminate these odors with an odor adsorber now on the market. According to the manufacturer, the odor adsorber will completely extract all odor-creating organic and inorganic gases and vapors including amyl, butyl and ethel acetates; also benzol, acetone, alcohol and turpentine.

As stated in the manufacturer's literature, there is only one way by which odors can be disposed of with certainty; the odor-creating particles of matter must be extracted from the air. That is precisely what the odor adsorber does, whether the odor be in the form of a gas, vapor or solid.

The odor adsorber is said to be extremely simple in construction and can be easily applied to any ventilating or air-conditioning system. It has nothing to get out of order, requires a minimum of attention and is reasonable in both initial cost and the cost of maintaining at full effectiveness.

The principle of the odor adsorber involves the passage of contaminated air through a bed of granular activated coconut-shell carbon — a form of carbon which has the special property of being able to absorb and hold all condensable gases and vapors that come in contact with its activated surface. When the carbon has reached the limit of its adsorptive capacity, it is simply reactivated.

Recover and Re-use Solvents

The recovery of solvents from dirty thinners, waste and sludge is an economy in operating that should not be overlooked by any manufacturer using thinners and solvents in connection with his finishing process or for cleaning. This has long been recognized by the lacquer industries. Most lacquer companies who have considerable quantities of dirty wash solvents send their sludge to solvent-recovery services for cleaning. Until recently such service has not been available to concerns who accumulated dirty solvents in lots of less than 1000 gallons.

At the present time, however, due to improved methods and equipment built especially for this work, several of the solvent-recovery services are in a position to not only handle large shipments of 1000 gallons to a carload, but they can also efficiently recover the solvents from lots of 100 gallons and up.

New wash thinners and solvents of good quality are expensive. By using modern methods and special treatment for each lot, the solvent-recovery services are now able to recover practically all the solvents contained in the sludge, and the cost per gallon of recovered solvent is very much less than the cost of new materials. The recovered solvents are as effective as new thinners. They show a satisfactory moisture test, they are free from acid and dirt and they are water white.

By using this service the manufacturer not only obtains his wash solvents and thinners at a much lower cost, but also saves the cost and annoyance of disposing of his dirty sludge.

In these times, when every concern in business is diligently hunting for and stopping every possible loss, it will pay all users of thinners and solvents to investigate the feasibility of having their solvents recovered.

Stirring Materials by Power

When thinner, retarder, drier or tinting colors are to be stirred into a finishing material, or when two or more materials are to be mixed, the stirring should be done thoroughly. This is obvious to any practical man, but what is thorough stirring? It is something more than "hand paddling" the liquid for a few minutes.

Thorough stirring can be accomplished quickly, easily and safely by using one of the many available motor-driven stirrers that are now on the market. The small models operate from an electric light socket. Some of them are arranged to clamp to a perpendicular rod mounted on a convenient base upon which the small container of finishing material is placed.

A sparkless quiet-running motor, with its extended shaft car-

rying a mixing propeller, can be adjusted vertically along this perpendicular rod. The speed of the stirrer can be regulated to suit the type of work at hand—from gentle circulation to vigorous agitation. One of these power stirrers—one large enough or powerful enough for the work at hand—should be part of the equipment in every finishing room. In many cases a power stirrer is also needed in tanks or containers of material to keep the material thoroughly mixed so that all pigment will be in suspension during the time it is being used.

Painting Welding Booths

LACK of attention to the painting of the interiors of welding booths is the cause of much poor workmanship and a great deal of inefficiency in a large number of manufacturing plants.

The walls of welding booths painted with improper paint will reflect glare, thus making it difficult for the workman to see plainly what he is doing.

I have eliminated this trouble in our plant by spraying the walls with the following formula:

Drop black in oil	(pint)	1
Flattening oil	(qt.)	1
Japan dryer	(pint)	½
Varnish	(pint)	¼
Turpentine or naphtha	(gal.)	1

If the cup method of spraying is employed, shoot a 5-in. fan, with the fluid valve wide open. Hold the gun within 12-in. of the work. Use the air pressure as high as the workman can handle—90-lbs. being the ideal pressure.

Inasmuch as the drop black clings to the skin it will be advisable for the painter to apply a coating of grease or cream to his hands and face before painting the booths, so that he will be able to wash his face and hands clean when the job is completed.

Incidentally I might mention here that a good method for removing lampblack, bone char in ink, and carbon black in various forms, is with heavy paste stock dry-cleaning soap that has been reduced in naphtha. Some of the leading chemists admit that there is no solvent that will actually dissolve carbon black, but dry-cleaner's paste soap will free it from the pores so that it can be washed away with naphtha.—H. H. GLINKE.

EARLY CALIFORNIA

A glimpse of "Coronado" furniture—reminding you of Early California plus a dash of Spanish influence—exhibited at the Los Angeles Furn. Mart. Each piece shows a worn antique appearance.

Case History No. 3

A manufacturer of eyelets presented a problem of coating rubber shoe eyelets with a white finish that must withstand the rubber vulcanization process without discoloration.

This not only brought up the problem of discoloration that was so serious in this industry, but also the problems of meeting their tumbling methods in the finishing department, and of withstanding the punishment that eyelets receive when being punched and formed into the shoe.

With the help of several consultants, a successful coating of the baking type was developed. Rubber vulcanization tests proved the white coating to show no discoloration. Actual eyelet making and insertion in shoes showed the finish was able to withstand the physical punishment required. Naturally, this opened much wider markets for eyelets.

Those in finishing departments, interested in a coating of this type, or in the solution of a specific problem of their own, are invited to write, furnishing all details, to — INDUSTRIAL RESEARCH, DIVISION OF WIPE - ON CORPORATION, 105 HUDSON STREET, NEW YORK. A complimentary copy of "Case Histories" will be sent covering this problem and others, such as, non-discoloring white metal finishes; burnproof enamels; two-tone finishes; 10 minute air dry metal finishes; magnesium alloy finishes; airplane finishes and seam compound, and coatings to resist alkali, alcohol and acids, together with a solution of your individual problem.—Adv.

Metal Coating Processes

The Calibron Notebook No. 4 is a 24-page booklet (6x9-in.) dealing with Metal Coating Processes—taking up specifically; 1) methods now used, 2) a new development — the Martin Process, 3) diffusion of metals, and 4) Fe-Al-Cl reactions. It is published by Calibron Products, Inc., 51 Lakeside Ave., West Orange, N. J.

New Booklet on Dust Questions

A new booklet entitled, "Pertinent Questions and Answers Concerning Dusts," has been issued by the Mine Safety Appliances Co., Braddock, Thomas and Meade St., Pittsburgh, Pa.

In view of the widespread interest in the harmful effects of breathing dusts, especially those containing free silica (producing silicosis), and because of the added stimulation created by Federal Agencies and state work in industrial hygiene, considerable material has been published on this subject.

The new M. S. A. booklet endeavors to answer some of the important questions that arise continually regarding the nature and effects of dusts, in simple and non-technical language.

Copies are available either by writing this publication, or by addressing the manufacturer direct.

Commercial Solvents Corp. Announces Two New Directors

Theodore P. Walker, president of Commercial Solvents Corporation, announced today the election of Samuel M. Greer and Linus C. Coggan to the board of directors of the corporation.

Mr. Greer was elected to fill the vacancy in the directorate caused by the death of William D. Ticknor, president of Commercial Solvents Corporation. Mr. Greer is director of American Steel Foundries and Servel, Inc.

Mr. Coggan, who succeeds Philip L. Reed on the board of Commercial Solvents, is a director of the Kansas City Southern Railway and is also counsel for and director of the Corn Products Refining Company, whose president, Mr. George M. Moffett, is also a member of the board of directors of Commercial Solvents Corporation.

Mr. Walker, who was elevated to the presidency of Commercial Solvents Corporation upon the death of Mr. Ticknor, has been with the corporation since 1922. He was elected a vice-president in 1924 and has been executive vice-president since 1925.

More Gas Used by Industry

The amount of gas used in industry and commerce has been at an all time peak for two years and considerably above the pre-depression years. The figures for 1937 show a gain of 10% over the preceding 12-month period, or double the rate of increase in industrial production and commercial activity as reported by the Federal Reserve Bank.

One outstanding feature is that gas has made bigger strides than industry for a number of years. The philosophy by which industry has made such rapid progress in recent years, is to give constantly better value at lower prices. The record shows that the gas industry, in its service to all industry and commerce has more than kept pace with this philosophy of progress. Industrial and commercial gas customers, back in 1929, amounted to 452,000, but the records show that today they total 1,017,000.

"Double Duty" Caulking Compound

Here is a newly developed caulking compound that gives double duty to the user because of fact that it can be applied with either tool or gun. For narrow openings around doors, windows, etc., gun applications similar to a lubricating gun is desirable. For larger openings, holes, chimney bases, etc., it is applied with putty knife or similar tool.

Made of rubber, linseed oil and asbestos, expansion and contraction are readily taken care of. Linseed oil provides a fine protecting film which wards off moisture, giving extra long wear. The manufacturer states that this unusual combination of ingredients makes possible a tough, elastic, air-tight and waterproof caulking compound that gives five to ten years' service without necessity of replacement. The compound sets rapidly and within a day or so it can be painted like wood or any other material. It provides an elastic sea, expands and contracts as required and will not crack or check.

The manufacturer of this new "Double Duty" caulking compound is Tamms Silica Co., 228 N. LaSalle St., Chicago, Ill.

Classified Advertising

Rate: 45 cents per line per insertion—minimum $1.35

FINISHER

With ability to make graining plates by new method, no photographic equipment required, would like position with firm to make same, in return for good steady job. Will furnish samples on request. Address IF-703, care Industrial Finishing.

THOROUGH INDUSTRIAL FINISHING SALESMAN

Headquarters in Atlanta. Established following in Georgia, east Tennessee, North Carolina, Florida and Virginia—wants connection with a known reputable company making complete line metal and wood, varnishes, lacquers, enamels (both synthetic and conventional). Preferably one located in Cincinnati, Louisville or Indianapolis. Address IF-702, care Industrial Finishing.

EXPERIENCED SALESMAN

Wanted. Chicago territory, who can produce large volume industrial business. Will work with you on profit sharing arrangement. Have low overhead and low raw material cost. Write FRANK GILL, Wisconsin Rapids, Wis.

FOREMAN FINISHER WANTED

By store fixture manufacturer. Must be thoroughly familiar with staining, shading and modern finishing procedures. State experience and salary desired. Address THOMASON COMPANY, INC., 2600 Granby st., Norfolk, Va.

FOR SALE

One Walnut graining plate, used only three months. Graining surface 40" x 120". Will sell at 1/3 cost. Address IF-701, care Industrial Finishing.

SALESMEN WANTED

In all territories calling on Industrial Accounts to sell Wrinkle Finish. Largest commissions paid. Write FRANK GILL, Wisconsin Rapids, Wis.

INSTRUCTION

Evening classes in Philadelphia in Paints, Resins, Metals and Industrial Processes. Elementary and advanced courses by mail. DR. BROWN, Industrial Consultants, 3404-C Baring st., Philadelphia, Pa.

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